

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A position measuring device usable for measuring a relative position between two members, the position measuring device comprising:

5 an imaging detector; and  
a structured light generating target member,  
wherein:

the imaging detector and the structured light generating member are positionable to provide an image on the array detector that corresponds to a structured light pattern  
10 generated by at least a portion of the structured light generating target member; and

the image on the array detector is usable to determine at least one measurement value that corresponds to at least one degree of freedom of the relative position between the imaging detector and the target member.

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